PACIFIC MARINE ENVIRONMENTAL LABORATORY

Seattle, Washington

The Pacific Marine Environmental Laboratory (PMEL) conducts interdisciplinary oceanographic research in support of NOAA's climate, ecosystems, and tsunami services. Current PMEL programs focus on oceanographic observational systems that lead to prediction of the ocean environment on time scales from hours to decades. Studies are conducted to improve our understanding of the complex physical and geochemical processes operating in the world oceans, to define the forcing functions and the processes driving ocean circulation and the global climate system, and to improve environmental forecasting capabilities and other supporting services for marine commerce and fisheries. Results from PMEL research activities contribute to NOAA's strategic goals of ecosystem-based management, climate services, and weather and water.

Brief History:

PMEL was formed in 1973 to research water quality issues in Puget Sound, Washington, tsunami in Hawaii, and to make physical and chemical oceanographic measurements in the Gulf of Alaska, Bering Sea, and equatorial Pacific. Initial funding came from other agencies in need of basic oceanographic information. In 1978, PMEL's oil spill trajectory project was transferred to NOS that eventually became the NOAA HAZMAT program. In 1979 PMEL became part of the NOAA climate research program that eventually led to the development and implementation of the array of 70 buoys designed to document El Nino processes. In 1983 PMEL terminated Puget Sound studies to redirect funds to support climate research. Two NOAA initiatives in 1983 funded new research activities in fisheries oceanography (joint with NMFS) in the Bering Sea and Gulf of Alaska and hydrothermal venting research off the Oregon coast. By 1986 hydrothermal venting research discovered the first evidence of large scale oceanic impact from underwater volcanoes- megaplumes. The megaplume discovery led to a dual-use of the Navy's underwater sound monitoring system to listen for underwater eruptions. Because of this Navy asset, quick response to underwater eruptions in 1993, 1998, and 2001 were possible. These responses led to the discovery on new forms of micro-organisms expelled from a previously unknown underwater volcanic ecosystems. By 1992, fisheries research was issuing the first forecasts of pollock abundance for use in fisheries management. The El Nino array provided data for the first accurate forecast of the huge 1997/98 El Nino. A new program in Tsunami Hazard Mitigation was started in 1997 during which PMEL pioneered the development of a deep-ocean real-time tsunami monitoring network and the methodology for producing tsunami inundation maps to assist coastal communities in emergency management planning. The tsunami buoys were transferred to the NWS in 2003 and the entire program will be transferred to NWS in 2004. PMEL is host laboratory to NOAA Joint Institutes with the University of Hawaii (1978), University of Washington (1978), Oregon State University (1983), and University of Alaska (1998) and enjoys the benefits of these highly productive academic partnerships.

Financial Data (In thousands of dollars)

Fiscal Year	Permanent Funding	Other NOAA	Non-NOAA	Pass Through	TOTAL
FY 2001	7325.5	15761.4	2458.9	7263.6	32809.4
FY 2002	8357.8	16538.8	1007.7	8218.7	34123
FY 2003	9019.8	14720.7	1475.9	10419.5	35635.9

Permanent Funding Computation for FY 2002 & FY 2003

FY2002	$11,336.3K	FY2003	A8R1U	$ 2,888.4K
	-2,294.1K - Tsunami		A8R2U	$ 226.0K
	- 684.4K - FOCI		A8R3U	$ 6,589.8K
	$ 8,357.8K		Total	$13,879.1K
			A8R3PTM	$ 4,174.9K
				- 4,174.9K - Tsunami
				- 684.4K - FOCI
				$ 9,019.8K

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Personnel Data

FY	FEDERAL EMPLOYEES	JOINT INSTITUTE	Contractors	TOTAL
FY 1999	97	55	19	171
FY 2000	96	61	20	177
FY 2001	90	59	29	178
FY 2002	86	64	22	172
FY 2003	85	68	21	174

Data does not include Post Docs, visiting scientists, or NOAA Corp Officers

Average Age Federal/Scientific/Engineering and Technical Staff	46
Average Age of JI/Scientific/Engineering and Technical Staff	42

Federal Staff	PhD	28%	MS	19%
JI Staff	PhD	40%	MS	10%

PACIFIC MARINE ENVIRONMENTAL LABORATORY
PARTNERSHIPS

PARTNERSHIPS	IDENTIFY (and explain)
JOINT INSTITUTES	JISAO: collaboration in climate, fisheries, seafloor hydrothermal venting, and tsunami research. CIMRS: collaboration in seafloor hydrothermal venting research. JIMAR: collaboration in climate and tsunami research. CIFAR**:** collaboration in fisheries and arctic research
fPARTNERSHIPS WITH OTHER LABS	AOML & GFDL (CO2) Aeronomy Lab (Atmospheric Chemistry)
OTHER OAR PROGRAMS	OGP, OE, NURP
OTHER NOAA RELATIONSHIPS	NMFS/AFSC; NOS/COP/GLOBEC; HPCC; ESDIM; NWS/NDBC; NWS/Alaska, Pacific, and Western Regions; NMFS/NWFSC
OTHER FEDERAL AGENCIES	NSF, FEMA, USGS, NASA, ONR
STATE AGENCIES	States of Washington, Oregon, California, Alaska, and Hawaii Emergency Management offices
LOCAL PARTNERSHIPS	Exxon Valdez Oil Spill Trust North Pacific Marine Research Board
UNIVERSITY PARTNERSHIPS	Univ. of Washington (Climate & Vents research); Univ. of Alaska (Fisheries oceanography, Arctic research); Oregon State Univ. (Vents research) Univ. of Hawaii (Tsunami, Vents research)
INTERNATIONAL	ENSO: Japan (JAMSTEC), Brazil (INPE), France (IFREMER); Vents: Canada (Institute of Ocean Sciences, Canadian Scientific Submersible Facility; Fisheries Oceanography: Canada (Department of Fisheries and Oceans)